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(54) **SYSTEMS AND METHODS FOR
AUTOMATICALLY LOCATING WEB-BASED
SOCIAL NETWORK MEMBERS**

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(57) **ABSTRACT**

(52) **U.S. Cl.** **709/219; 709/207; 709/218;**
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See application file for complete search history.

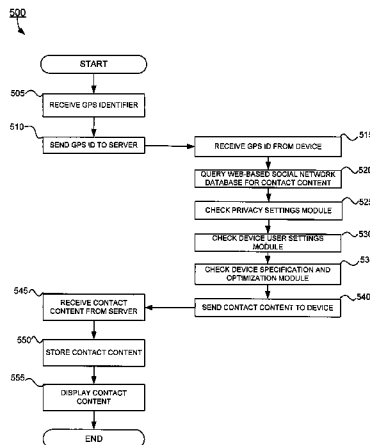
Systems and methods for automatically locating web-based
social network members are provided. According to one
embodiment, contact content including an associated GPS
identifier and status for web-based social network members
located at or near the same location automatically appears on
a GPS-enabled device. A further exemplary system includes a
GPS-enabled device configured to receive a GPS identifier
and a status representing a location and a current state for a
web-based social network member, a processing module that
associates the received GPS-identifier and the received status,
and a communications module that sends the associated GPS-
identifier and status to a server comprising a web-based social
network database. Contact content in a web-based social net-
work database record in the web-based social network data-
base is updated to include the associated GPS identifier and
status for the web-based social network member.

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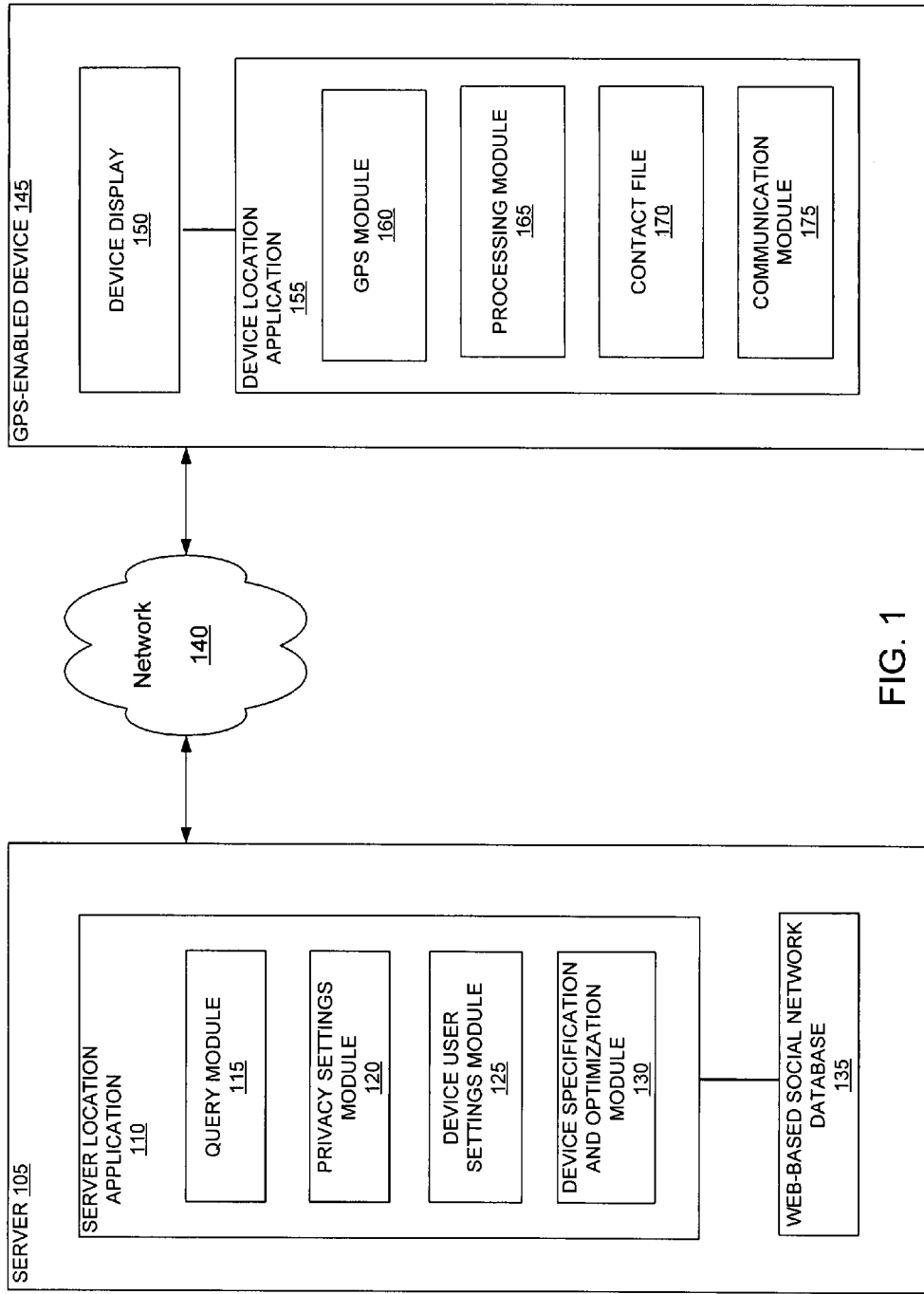


FIG. 1

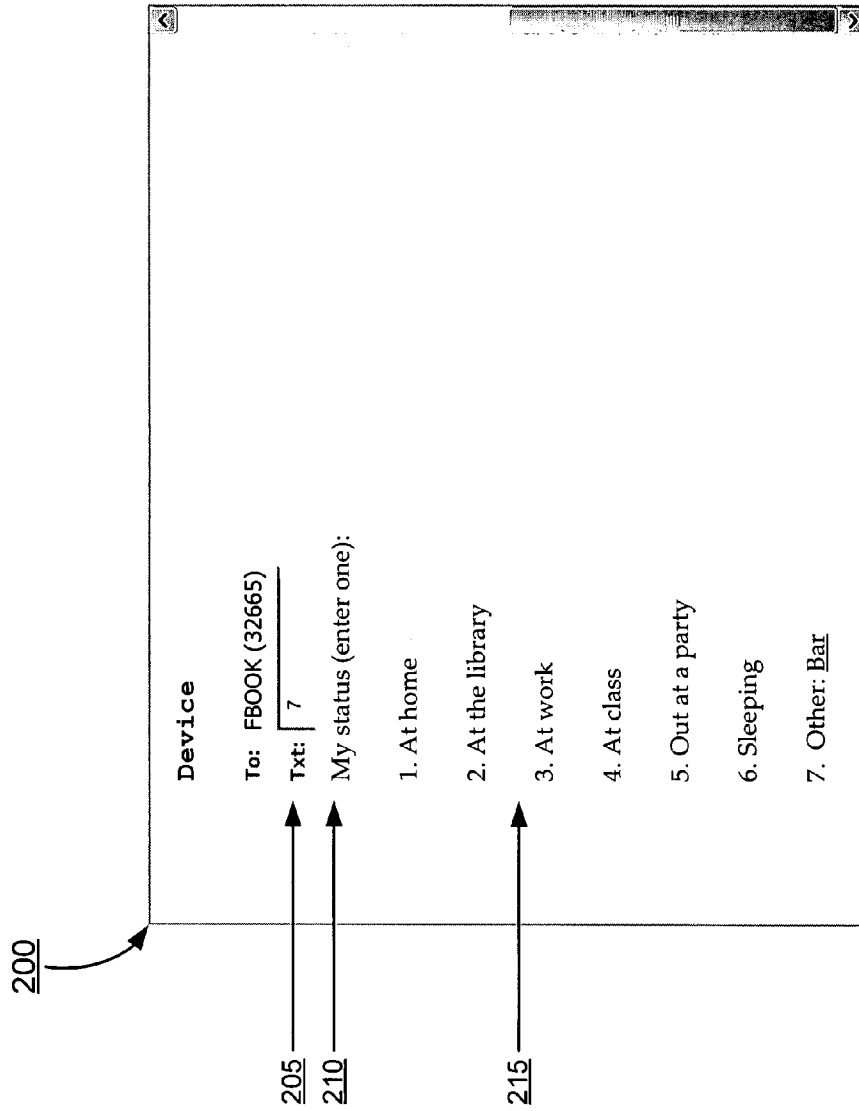


FIG. 2

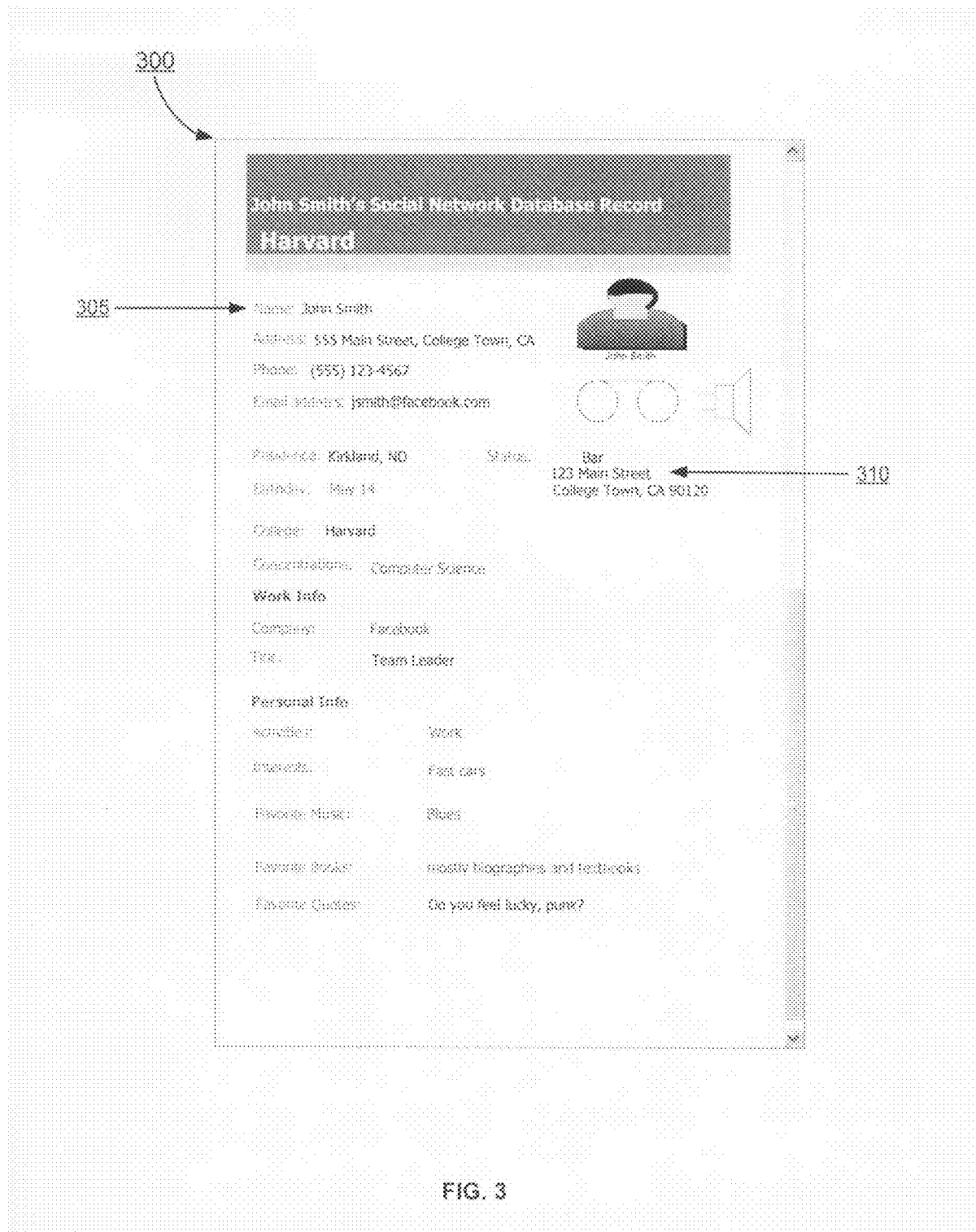
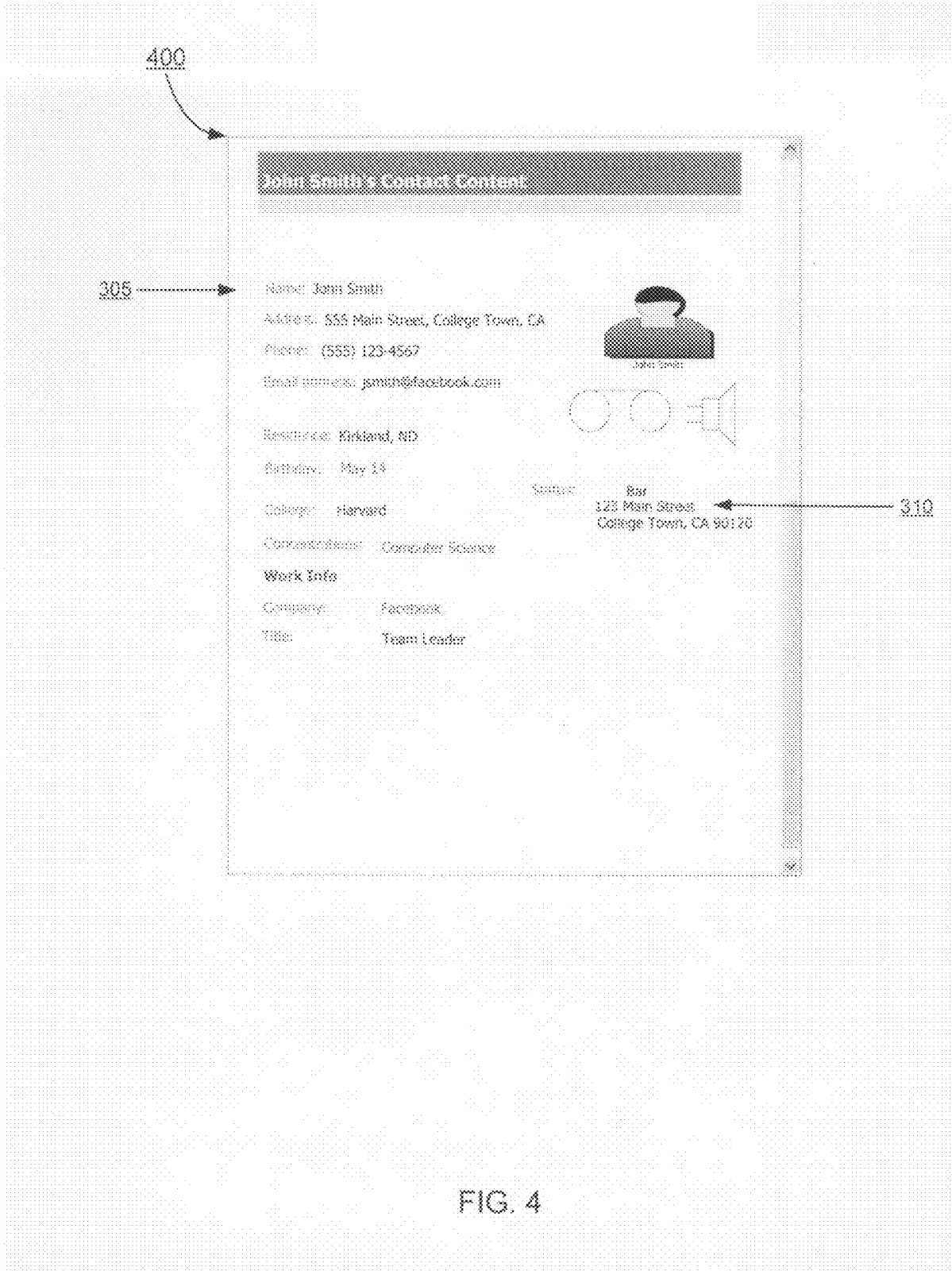


FIG. 3



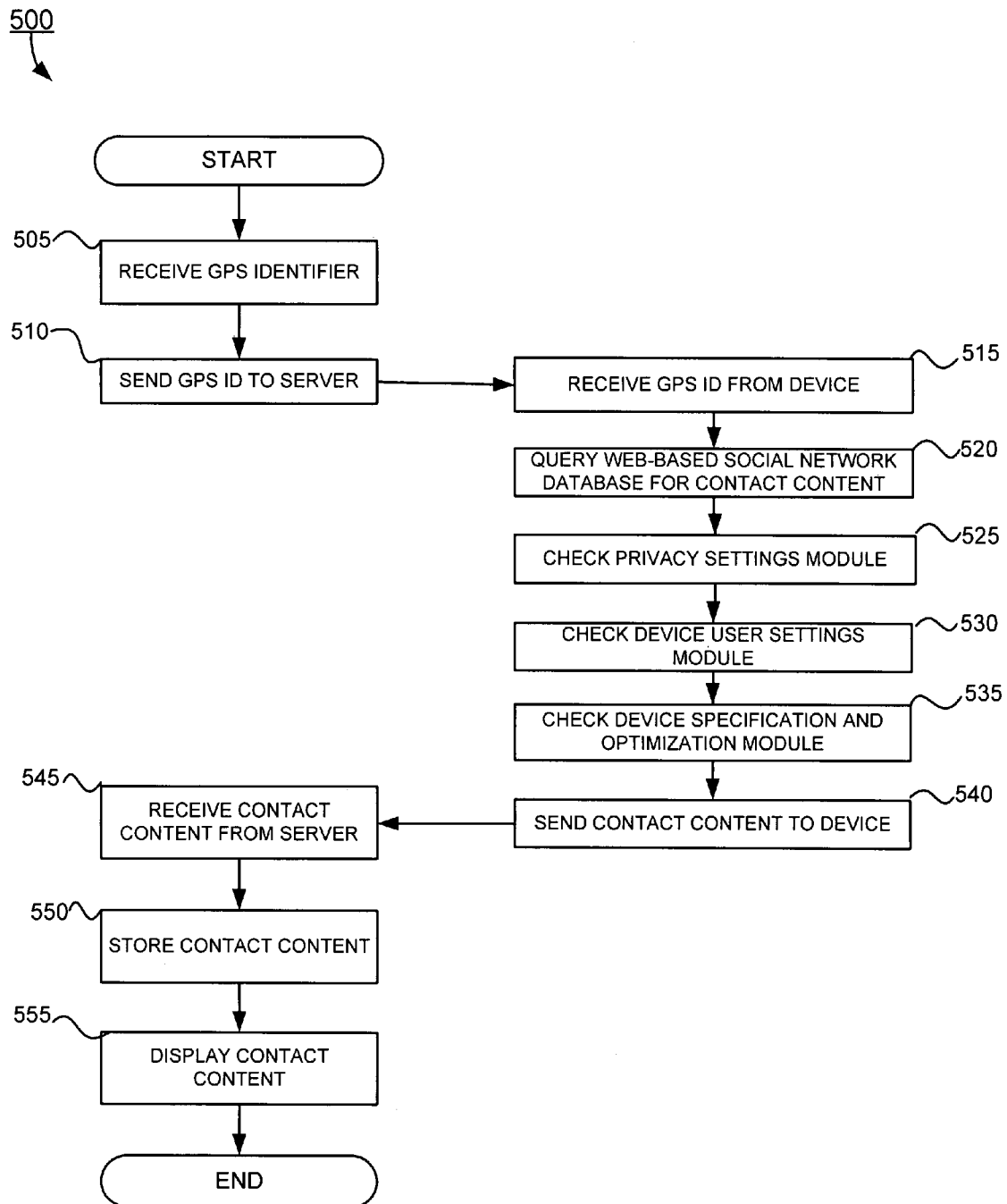


FIG. 5

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SYSTEMS AND METHODS FOR AUTOMATICALLY LOCATING WEB-BASED SOCIAL NETWORK MEMBERS

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to web-based social networks, and more particularly to systems and methods for automatically locating web-based social network members.

2. Description of Related Art

Deciding whether to contact a particular friend, classmate, or coworker often hinges on where the person is located and what that person is doing. Such a decision typically has to be made in a limited amount of time with a limited amount of information. Further, when a person arrives at a particular location, such as a park or shopping mall, they often want to know if someone else they know is also at the same location. There is thus a need for systems and methods for automatically locating web-based social network members.

SUMMARY OF THE INVENTION

Systems and methods are provided for automatically locating web-based social network members. An exemplary method includes receiving a GPS identifier into a device, receiving a status into the device, associating the GPS identifier and the status, storing a copy of the associated GPS identifier and status in a contact file on the device, and sending the associated GPS identifier and status to a server comprising a web-based social network database. Another exemplary method includes receiving across a network on a server comprising a web-based social network database, an associated GPS identifier and status for a web-based social network member, updating contact content in a web-based social network database record in the web-based social network database with the associated GPS identifier and status for the web-based social network member, and providing the contact content to a communications module for sending across the network to a device having a contact file configured to automatically store the contact content.

An exemplary system according to one embodiment comprises a device with a GPS module configured to receive a GPS identifier, a status entry screen on the device configured to receive a status, a processing module on the device configured to associate the GPS identifier and the status, a contact file on the device configured to store a copy of the associated GPS identifier and status, and a communication module on the device configured to send the associated GPS identifier and status to a server comprising a web-based social network database.

Another exemplary system includes a server comprising a web-based social network database, the server configured to receive across a network an associated GPS identifier and status for a web-based social network member, the web-based social network database including a web-based social network database record for the web-based social network member, the web-based social network database record configured to update contact content with the associated GPS identifier, and the server further configured to provide the contact content to a communications module for sending across the network to a device having a contact file configured to automatically store the contact content.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates an exemplary architecture for automatically locating web-based social network members;

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FIG. 2 shows a screenshot for an exemplary status screen used to transmit a status for a web-based social network member to a web-based social network database;

FIG. 3 shows a screenshot of an exemplary web-based social network database record;

FIG. 4 shows a screenshot of an exemplary contact content screen; and

FIG. 5 shows a flow chart for an exemplary method for automatically locating a web-based social network member.

DETAILED DESCRIPTION OF THE INVENTION

Systems and methods for automatically locating web-based social network members are provided. According to one embodiment, a GPS identifier is received on a GPS-enabled device that is used to query a web-based social network database. Contact content including an associated GPS identifier and status for other web-based social network members located at or near the same location automatically appears on the GPS-enabled device. A further exemplary system includes a GPS-enabled device configured to receive a GPS identifier and a status representing a location and a current state for a web-based social network member, a processing module that associates the received GPS-identifier and status, and a communications module that sends the associated GPS-identifier and status to a server comprising a web-based social network database. Contact content in a web-based social network database record in the web-based social network database is updated to include the associated GPS identifier and status for the web-based social network member.

FIG. 1 illustrates an exemplary architecture **100** for automatically locating web-based social network members. Architecture **100** comprises a server **105**, a network **140**, and a GPS-enabled device **145**. Server **105** comprises a server location application **110** and a web-based social network database **135**. Server location application **110** includes a query module **115**, a privacy settings module **120**, a device user settings module **125** and a device specification and optimization module **130**. GPS-enabled device **145** comprises a device display **150**, and a device location application **155**. The device location application **155** includes a Global Positioning System (“GPS”) module **160**, a processing module **165**, a contact file **170**, and a communication module **175**.

According to one method, a member of a web-based social network having a GPS-enabled device **145** receives a GPS identifier into GPS module **160**. The GPS identifier may represent a current geographic location (e.g. street address) for the member of the web-based social network. For example, a GPS identifier may be received into GPS module **160** of GPS-enabled device **145** that indicates 123 Main Street, College Town, Calif. 90210 is a current geographic location for the member. Using a keypad, touch screen, or similar mechanism on the GPS-enabled device **145**, the member may enter a status, which is received by the GPS-enabled device **145**. The status represents a current state for the member at or near the time the GPS identifier is received into GPS module **160**. A status may include an arbitrary designation such as “at home,” “at work,” “at doctor’s office,” and/or another similar arbitrary designation. A processing module **165** associates the received GPS identifier with the received status. For example, the processing module **165** might associate the received GPS identifier of 123 Main Street, College Town, Calif. 90210 with the received status of “at home.” A copy of the associated GPS identifier and status is stored in contact file **170**. A communication module **175** sends the associated GPS identifier and status to server **105**, where it is

received. The server **105** comprises a web-based social network database **135**. The web-based social network database **135** comprises a social network database record **300** (FIG. 3) for each web-based social network member. Contact content in the web-based social network database record **300** is updated to include the associated GPS identifier and status. The updated web-based social network database record may be queried by other members of the web-based social network, subject to privacy settings, as described herein.

In an alternative method, instead of receiving a GPS identifier into GPS module **160**, a web-based social network member may manually enter a street address on a keypad or touchscreen of a GPS-enabled device **145** or a non GPS-enabled device. The street address is received by the GPS-enabled device **145** or the non GPS-enabled device in a manner similar to the way a GPS identifier is received by a GPS-enabled device **145**. When a corresponding status is received by the GPS-enabled device **145** or the non GPS-enabled device, processing module **165** associates the received street address with the received status. Contact file **170** stores a copy of the associated street address and status, and communication module **175** sends the associated street address and status to server **105**.

In a further alternative method, the GPS identifier may include information utilizing or originating from one or more of several different types of technologies that provide either fully or partially location-based information, including, without limitation, network-based triangulation as well as hybrid approaches using various GPS networks.

In an exemplary system, processing module **165** is further configured to check contact file **170** for a corresponding status if a GPS identifier is received into GPS module **160** without a corresponding status. If a corresponding status is found, it will be displayed on device display **150**. If a status corresponding to a received GPS identifier is not found in contact file **170**, communication module **175** sends the received GPS identifier to server **105** without the status. Query module **115** on server **105** queries web-based social network database **135** for a status associated with the GPS identifier. If a status corresponding to the GPS identifier is found in the web-based social network database **135**, it is sent from server **105** to GPS-enabled device **145**. Processing module **165** associates the received GPS identifier with the status, and a copy of the associated GPS identifier and status is stored in contact file **170**.

In a further exemplary method, a received GPS identifier is sent by communication module **175** to server **105**, regardless of whether the received GPS identifier has an associated status in contact file **170** and/or in web-based social network database **135**. In response, query module **115** on server **105** queries web-based social network database **135** for contact content of other members of the web-based social network having a matching or near matching GPS identifier in their web-based social network database records **300**. If one or more other members of the web-based social network are determined to have a matching or near matching GPS identifier included on their web-based social network database records **300**, contact content for those other members is sent from server **105** to GPS-enabled device **145**. As a result, the querying social network member learns about the other social network members located nearby.

In yet a further exemplary method, a received GPS identifier that does not have an associated status may be sent by communications module **175** to server **105**, whereupon server **105** or an affiliated module may associate the GPS identifier with a status.

According to some embodiments, a privacy settings module **120** forms part of server location application **110**. Based on privacy settings selected by a member of a web-based social network, privacy settings module **120** is configured to limit querying of certain associated GPS identifiers and statuses in web-based social network database **135**. For example, in one embodiment, a member of a web-based social network may select privacy settings to provide their associated GPS identifier and status to only those people designated by the member as "friends" of the member.

The server location application **110** may comprise a device user settings module **125** for controlling such functions as when the server **105** communicates with the GPS-enabled device **145**. For example, the device user settings module **125** can be set to direct the server **105** to communicate with the GPS-enabled device **145** during standard working hours. The device user settings module **125** can also be set to allow the server **105** to communicate with the GPS-enabled device **145** in response to certain changes in the web-based social network database **135**. For example, the device user settings module **125** can be set to allow the server **105** to communicate with the GPS-enabled device **145** when a particular member of the web-based social network updates her associated GPS identifier and status in her web-based social network database record **300**.

A device specification and optimization module **130** on the server location application **110** may be configured with specifications for a wide variety of GPS-enabled devices **145** communicating with the server **105**. The device specification and optimization module **130** recognizes the type of GPS-enabled devices **145** being used to communicate with the server **105** and formats an associated GPS identifier and status to accommodate the specifications of the particular device **145**. For example, the device specification and optimization module **130** may automatically recognize that a member of a web-based social network is using a BlackBerry™ device to communicate with the server **105**. Accordingly, the device specification and optimization module **130** will format an associated GPS identifier and status sent to the device to accommodate the device display **150** of the BlackBerry™ device.

It will readily be appreciated by one of ordinary skill in the art that there are multiple possible combinations and locations for the herein described component applications and modules. For example, web-based social network database **135** may also function as part of server location application **110** and/or server **105**, or as a standalone application, separate from server location application **110** and/or server **105**. Further, a number of commonly known communications mechanisms can be used for a GPS-enabled device **145** to communicate with the server **105** across network **140**. Network **140** may include an Internet network and/or other wireless or wired networks such as mobile device carrier networks. Further, GPS-enabled device **145** may also directly communicate with other devices similar to GPS-enabled device **145**. All of these variations remain within the scope of claimed embodiments.

FIG. 2 shows a screenshot for an exemplary status screen **200**. Exemplary status screen **200** is used to send a received status of a web-based social network member to a server comprising a web-based social network database **135** (FIG. 1). The exemplary status screen **200** includes a status entry box **205**, instructions **210** and status selections **215**. The status screen **200** typically appears on device display **150** (FIG. 1).

A status for a web-based social network member is received in status entry box **205**. According to one embodiment, the status may be received via manual entry by a web-

based social network member on a keypad or on a touchscreen on a GPS-enabled device **130** (FIG. 1). In a further embodiment, a status may be received from another device that is the same as or similar to GPS-enabled device **145**.

In the exemplary status screen **200**, instructions **210** instruct a web-based social network member to select a status from seven arbitrary status selections **215**. These selections include, “[a]t home,” “[a]t the library,” “[a]t work,” “[a]t class,” “[o]ut at a party,” “sleeping,” and/or “other.” If the web-based social network member selects a status of “other,” they may be prompted to type-in an arbitrary status to represent their current state. For example, a web-based social network member selecting a status of “other” by entering selection “7” into status entry box **205** is prompted to type-in “Bar.” According to one embodiment, a GPS identifier received into GPS module **160** will be associated by processing module **165** with the received status of “Bar.” For example, a GPS identifier received into GPS module **160** may be a street address of “123 Main Street, College Town, Calif., 90120.” Accordingly, processing module **165** will associate “123 Main Street, College Town, Calif., 90120” with “Bar.” A copy of the associated GPS identifier and status (i.e. “Bar, 123 Main Street, College Town, Calif., 90120”) is stored in contact file **170**, and communication module **175** sends the associated GPS identifier and status to server **105**.

It will readily be appreciated by one of ordinary skill in the art that other status selections may be included in exemplary status screen **200** and remain within the scope of embodiments claimed herein.

FIG. 3 shows a screenshot of an exemplary web-based social network database record **300**. The exemplary social network database record **300** is for John Smith of Harvard University. The social network database record **300** includes John Smith’s contact content **305**. According to various embodiments, contact content includes some or all information in web-based social network database **135**. Contact content also includes expression content, such as audio/video. Audio/video is any audio, video, audiovisual, pictorial, photograph, image form, text file, and/or all variations and combinations thereof.

The contact content **305** shown in exemplary social network database record **300** includes John Smith’s associated GPS identifier and status **310**. In the social network database record **300**, John Smith’s associated GPS identifier and status **310** is “Bar, 123 Main Street, College Town, Calif. 90120.”

FIG. 4 shows a screenshot of an exemplary contact content screen **400**. A contact content screen such as contact content screen **400** is displayed on the device display **150** (FIG. 1) of the GPS-enabled device **145** (FIG. 1). A social network database record such as social network database record **300** (FIG. 3) is one possible source of some or all of the contact content appearing on a contact content screen, such as exemplary contact content screen **400**.

The contact content screen **400** shown in FIG. 4 is for John Smith of Harvard University. The contact content screen **400** includes some or all of John Smith’s contact content **305**, which includes an associated GPS identifier and status **310** for John Smith.

According to some embodiments, some or all of the contact content on the contact content screen **400** automatically populates a contact file **170** (FIG. 1) on the GPS-enabled device **145**, as described in U.S. patent application Ser. No. 11/701,566 filed on Feb. 2, 2007, entitled “System and Method for Automatic Population of a Contact File with Contact Content and Expression Content,” and incorporated herein by reference.

According to further embodiments, after a GPS identifier is received into GPS module **160** of GPS-enabled device **145**, communication module **175** sends the GPS identifier to server **105** (FIG. 1) to query web-based social network database **135** for corresponding contact content. If one or more other members of a web-based social network are determined to have a matching or near matching GPS identifier included in their web-based social network database records **300**, contact content as seen in exemplary contact content screen **400** corresponding to those other members is sent from server **105** to GPS-enabled device **145**. As a result, the querying social network member learns about the other social network members located nearby.

FIG. 5 shows a flow chart for an exemplary method **500** for automatically locating members of a web-based social network.

At step **505**, GPS-enabled device **145** (FIG. 1) receives a GPS identifier into GPS module **160** (FIG. 1). In exemplary embodiments, a GPS identifier represents a street address for a web-based social network member. In a further embodiment, a GPS identifier can be entered by a web-based social network member using a keypad or touchscreen on a GPS-enabled device **145**, or on a keypad or touchscreen of a device that is not GPS-enabled.

At step **510**, the GPS-enabled device **145** sends the GPS identifier to server **105** (FIG. 1). According to various embodiments, communication module **170** (FIG. 1) in GPS-enabled device **145** sends the GPS identifier to the server **105**.

At step **515**, server **105** receives the GPS identifier across network **140** (FIG. 1) from the GPS-enabled device **145**. In some embodiments, network **140** may include an Internet network and/or other wireless or wired networks such as mobile device carrier networks.

At step **520**, query module **115** (FIG. 1) on server **105** queries web-based social network database **135** (FIG. 1) for contact content (including an associated GPS identifier and status) of other web-based social network members having a GPS identifier that is the same as, or closely related to the received GPS identifier.

At step **525**, server **105** checks a privacy settings module **120** (FIG. 1). According to one embodiment, the privacy settings module **120** is configured to limit contact content (including an associated GPS identifier and status) sent from server **105** to GPS-enabled device **145**. In an alternative embodiment, a privacy settings module **120** is configured to limit querying of web-based social network database **135**.

At step **530**, server **105** checks a device user settings module **125** (FIG. 1). According to some embodiments, device user settings module **125** controls such functions as when server **105** communicates with GPS-enabled device **145**. In a further embodiment, device user settings module **145** is configured to direct server **105** to communicate updated contact content (including an associated GPS identifier and status) to the GPS-enabled device **145** in response to certain changes in web-based social network database **135**.

At step **535**, server **105** checks a device specification and optimization module **130** (FIG. 1). According to one embodiment, the device specification and optimization module **130** is configured with specifications for a wide variety of GPS-enabled devices **145** communicating with server **105**. Device specification and optimization module **130** recognizes the type of GPS-enabled device **145** being used to communicate with the server **105** and formats contact content to accommodate the specifications of the GPS-enabled device **145**.

At step **540**, contact content (including an associated GPS identifier and status) for the other members of the web-based social network having the same or a closely related GPS

identifier is sent from server **105** to GPS-enabled device **145**. According to some embodiments, a number of commonly known communications mechanisms are used for server **105** to communicate across network **140** with GPS-enabled device **145**.

At step **545**, the GPS-enabled device **145** receives contact content (including an associated GPS identifier and status) from the server **105**.

At step **550**, the contact content is automatically stored in contact file **170** (FIG. 1). According to one embodiment, a contact file **170** is a component of the device location application **155** (FIG. 1) on the GPS-enabled device **145**.

At step **555**, the contact content is displayed on device display **150** (FIG. 1) of GPS-enabled device **145**.

While various embodiments have been described above, it should be understood that they have been presented by way of example only, and not limitation. For example, any of the elements associated with automatically locating web-based network members may employ any of the desired functionality set forth hereinabove. Thus, the breadth and scope of a preferred embodiment should not be limited by any of the above-described exemplary embodiments.

What is claimed is:

1. A method of sharing locations of users participating in a social networking service at a geographic location, the method executed by a computer system and comprising:

receiving location information and status information from a mobile device of a first user of the social networking service, the location information representing a geographic location of the first user, the status information manually provided by the first user on an input module of the mobile device;

associating the location information with the status information of the first user in a database; and
sending the status information and the location information of the first user to a second user for display.

2. The method of claim **1**, wherein the location information comprises street addresses determined by processing a wireless positioning signal detected at a sensor in the mobile device.

3. A computer server for providing a social networking service, comprising:

a database module configured to store location information in association with status information of a first user in a database responsive to receiving the location information and the status information from a mobile device of the first user, the location information representing a geographic location of the first user, the status information manually provided by the first user on an input module of the mobile device; and

a communication module configured to:

receive the location information and the status information associated with the first user from the mobile device; and

send the location information and the status information of the first user to a second user for display.

4. The server of claim **3**, wherein the location information comprises street addresses determined by a sensor in the mobile device.

5. The server of claim **3**, further comprising a privacy setting module configured to:

determine if the second user of the social networking service is included in a list of members selected by the first user to receive the location information and the status information; and

allowing transmission of the status information and the location information to the second user responsive to determining that the second member is included in the list.

6. The server of claim **3**, further comprising a device specification and optimization module configured to:

determine specification of a computing device of the second user, the specification including at least one of a type of the computing device and display capabilities of the computing device; and

format data including at least the location information and the location information into a page of information for transmission to the computing device according to the specification of the computing device.

7. The server of claim **3**, further comprising a querying module configured to retrieve the status information and the location information of the first user from the database module responsive to receiving a query from the second user.

8. A method of sharing locations of users of a social networking service, the method executed by a computer system and comprising:

receiving location information and entered information from a first user, the location information representing a geographic location of a first user of the social networking service from a mobile device of the first user, the entered information manually provided by the first provider on an input module of the mobile device;

associating the location information with the entered information of the first user in a database;

receiving a request from a second user for information associated with the geographic location;

querying the database to retrieve the entered information of the first user associated with the location information of the geographic location responsive to receiving the request; and

sending the entered information of the first user retrieved from the database to the second user for display on a computing device of the second user.

9. The method of claim **8**, wherein the location information is determined by a wireless positioning signal generated at the mobile device.

10. The method of claim **8**, wherein the location information is manually provided by the first user at the mobile device.

11. The method of claim **1**, further comprising:

receiving a request from the second user for information associated with the geographic location; and

querying the database to retrieve the status information of the first user associated with the location information of the geographic location responsive to receiving the request.

12. The method of claim **1**, wherein the second user is designated by the first user as connected to the first user in the social networking service.

13. The method of claim **1**, wherein sending the status information and the location information comprises generating a page of information about the first user including the status information and the location information of the first user.

14. The method of claim **1**, wherein the location information is determined by a wireless positioning signal generated at the mobile device.

15. The method of claim **1**, wherein the location information is manually provided by the first user at the mobile device.

16. The method of claim 1, further comprising:
 receiving location information of the second user;
 determining if the first user is in proximity to the second
 user based on the location information of the first user
 and the location information of the second user; and
 responsive to determining that the first user is in proximity
 to the second user, initiating transmission of information
 about the first user to the second user.

17. The server of claim 7, wherein the querying module is
 further configured to:
 receive location information of the second user;
 determine if the first user is in proximity to the second user
 based on the location information of the first user and the
 location information of the second user; and
 responsive to determining that the first user is in proximity
 to the second user, initiate transmission of information
 about the first user to the second user.

18. The server of claim 3, wherein the second user is
 designated by the first user as connected to the first user in the
 social networking service.

19. The server of claim 3, wherein the communication
 module is further configured to send the status information
 and the location information in a page of information about
 the first user.

20. The server of claim 3, wherein the geographic location
 is determined by a wireless positioning signal generated at the
 mobile device.

21. A method of sharing locations of users participating in
 a social networking service at a geographic location, the
 method executed by a computer system and comprising:
 receiving location information and status information from
 a device of a first user of the social networking service,
 the location information representing a geographic loca-
 tion of the first user, the status information manually
 provided by the first user on an input module of the
 device;
 associating the location information with the status infor-
 mation of the first user in a database; and
 sending the status information and the location information
 of the first user to a second user for display.

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